Electronic Version
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Claims

[c1] 1. A phase adjusting method of an analog-to-digital (A/D) video signal conversion, which comprises
setting a phase reference;
applying the phase reference to convert a first analog video frame to a first digital video frame and collecting a first set of pixel value of a plurality of predetermined positions from the first digital video frame;
applying the phase reference to convert a second analog video frame to a second digital video frame and collecting a second set of pixel value of said plurality of predetermined positions from the second digital video frame;
calculating an absolute display difference by adding up absolute differences between corresponding pixels in the first set and the second set of pixel value;
obtaining another phase reference and doing the above procedures over again to obtain another absolute display difference, choosing a target phase reference that produces a smallest absolute display reference; and
applying said target phase reference to convert a following analog video frame.

[c2] 2. The phase adjusting method of claim *1*, wherein said

plurality of predetermined positions are at four corners and a center of the digital video frame.

[c3] 3. The phase adjusting method of claim 1, wherein the first video frame and the second video frame are consecutive frames.

[c4] 4. The phase adjusting method of claim 1, wherein before obtaining the first digital video frame and the second digital video frame, a delay occurs for storing the first digital video frame and the second digital video frame to a frame buffer memory.

[c5] 5. The phase adjusting method of claim 1, wherein a moving average calculating method is applied to the absolute display differences to obtain a plurality of moving averages.

[c6] 6. The phase adjusting method of claim 5, wherein a best phase reference for the A/D conversion produces a smallest moving average.

[c7] 7. A phase adjusting method of an analog-to-digital (A/D) video signal conversion, which comprises
obtaining a plurality of digital video frames of the A/D conversion by setting a phase reference that is a member of a set of phase references;
calculating an absolute display difference by adding up

absolute differences between pixel value for corresponding pixel positions in the plurality of digital video frames;

picking up another phase reference from the set of phase references and repeating the above procedures; and

choosing a target phase reference that produces a smallest absolute display difference to convert a following analog video frame.

[c8] 8. The phase adjusting method of claim *7*, wherein said corresponding pixel positions are at four corners and a center of the frames.

[c9] 9. The phase adjusting method of claim *7*, wherein the plurality of digital video frames are consecutive frames.

[c10] 10. The phase adjusting method of claim *7*, wherein before obtaining the plurality of digital video frames, a delay occurs for storing the plurality of digital video frames to a frame buffer memory.

[c11] 11. The phase adjusting method of claim *7*, wherein a moving average calculating method is applied to the absolute display differences to obtain a plurality of moving averages.

[c12] 12. The phase adjusting method of claim *11*, wherein a

best phase reference for the A/D conversion produces a smallest moving average, and the best phase reference is used in a follow-up A/D conversion.